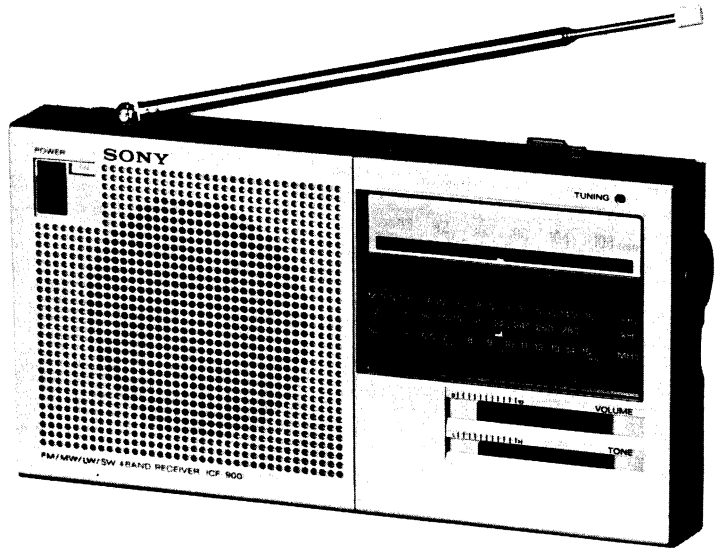
ICF-900

AEP Model
UK Model



FM/MW/LW/SW 4 BAND RECEIVER

SPECIFICATIONS

Frequency Range: FM 87.5 – 108 MHz
MW 530 – 1,605 kHz (566 – 187 m)
LW 150 – 280 kHz (2,000 – 1,071 m)
SW 6 – 15.8 MHz (50 – 19 m)

Antennas: FM/SW: Telescopic antenna
MW/LW: Built-in ferrite bar antenna

Speaker: Approx. 8.7 cm (3 1/2 inches) dia.

Power Output: 650 mW (at 10% harmonic distortion)

Output: Earphone jack (minijack)

Power Requirements: 4.5 V dc, three batteries, IEC designation R14 (size C)
AEP model
110, 127, 220 or 240 V ac, 50/60 Hz with optional Sony AC-122 or AC-456C AC power adaptor
UK model
110, 120, 220 or 240 V ac, 50/60 Hz with optional Sony AC-122 AC power adaptor

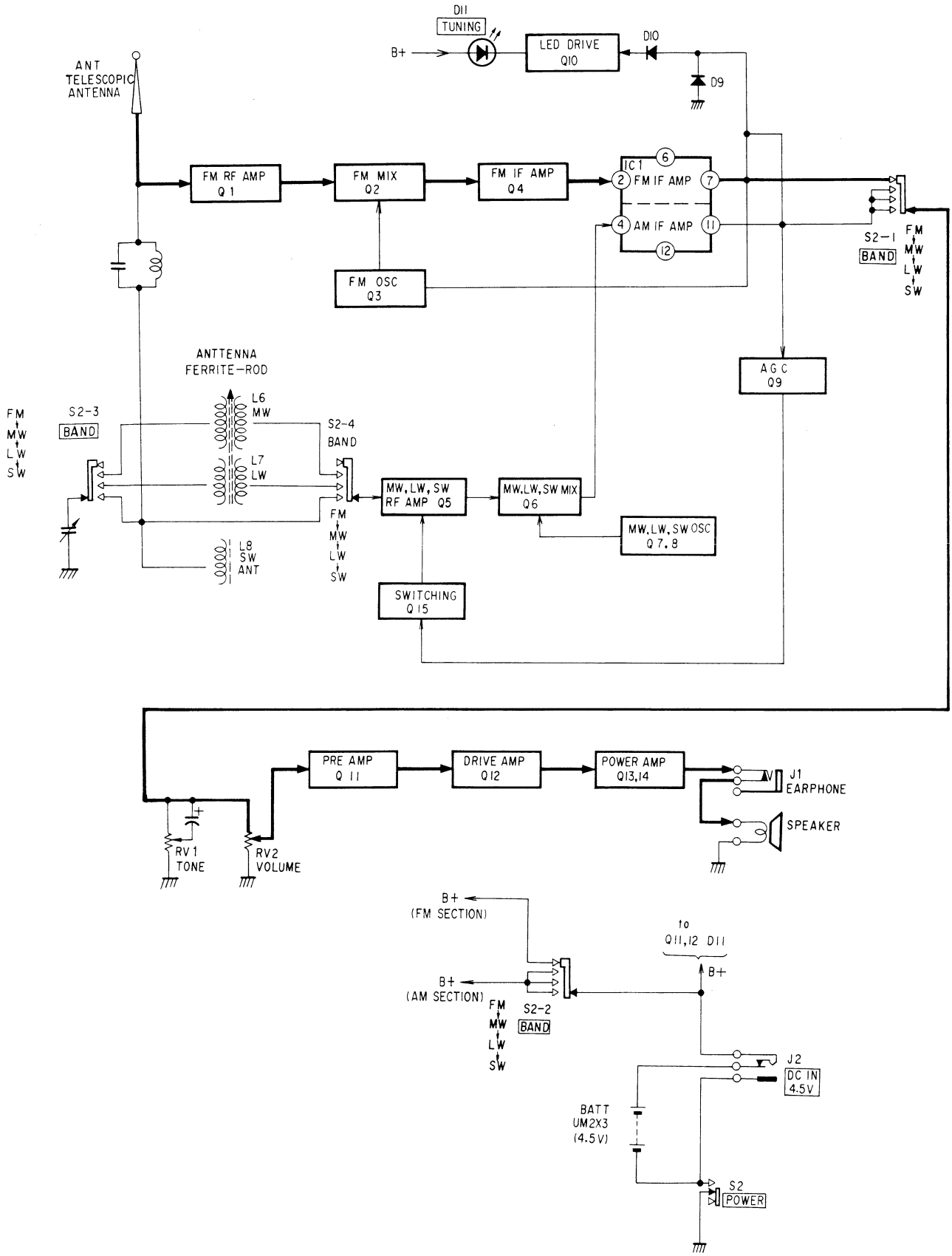
Battery life: Approx. 30 hours with Sony SUM-2(NS) New Super batteries

Dimensions: Approx. 229 x 123 x 44 mm (w/h/d) (9 1/8 x 4 7/8 x 1 3/4 inches), incl. projecting parts and controls with the carrying handle pushed down

Weight: Approx. 800 g (1 lb 12 oz), incl. batteries

SONY®
SERVICE MANUAL

SECTION 1
BLOCK DIAGRAM

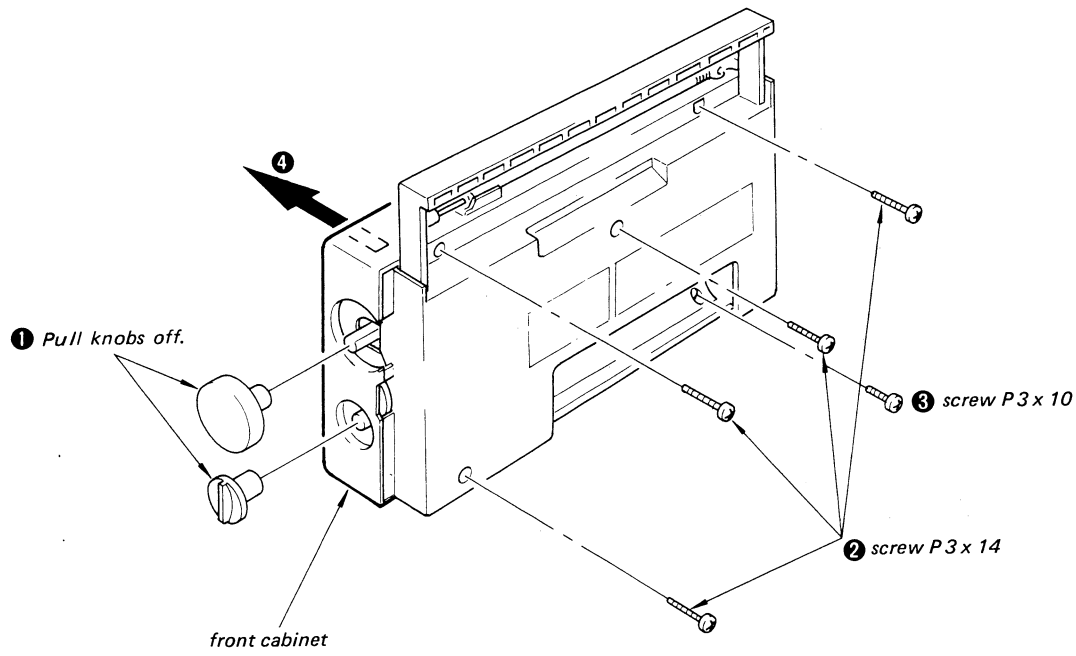


SECTION 2
DISASSEMBLY

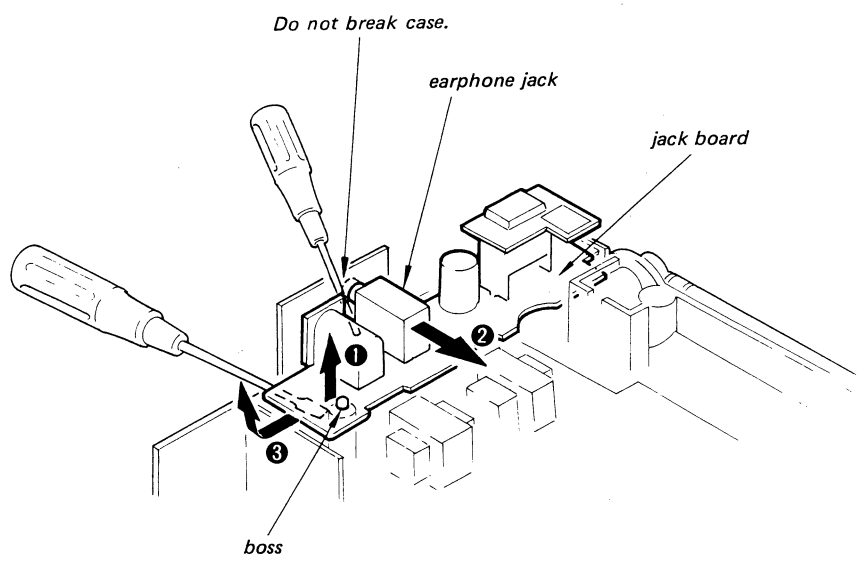
2-1. DISASSEMBLY

Note: Follow the disassembly procedure in the numerical order given.

FRONT CABINET

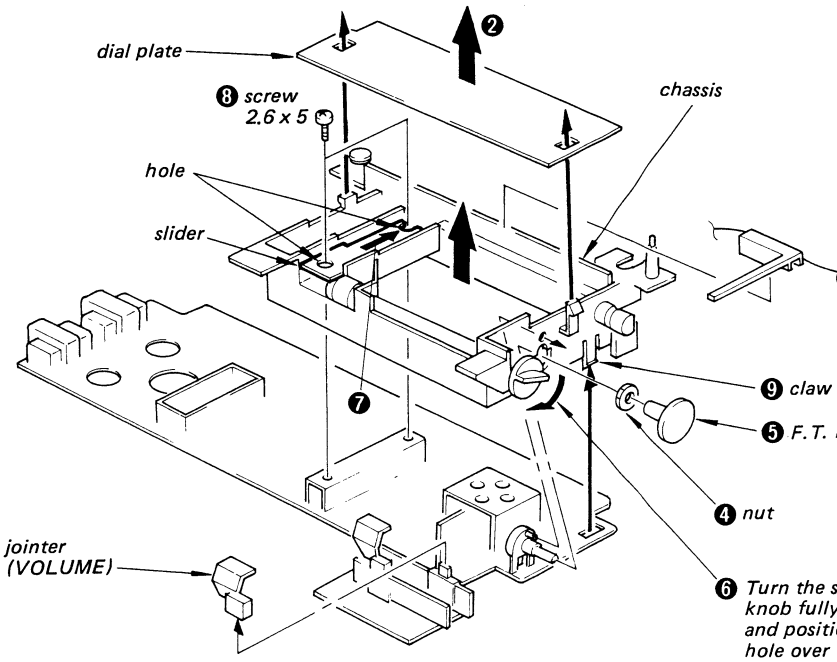


JACK BOARD

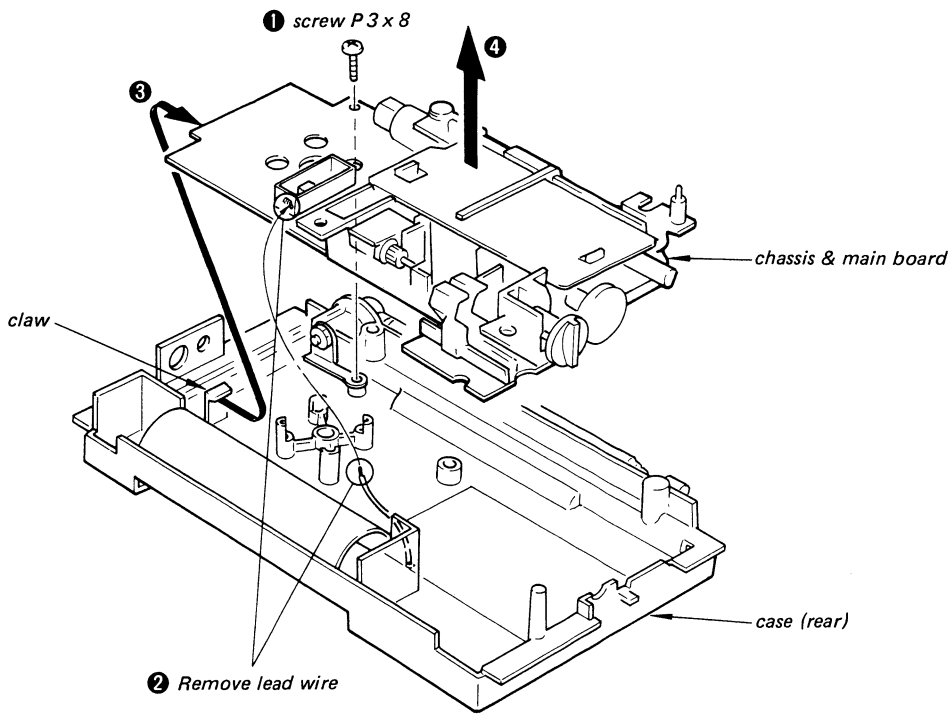


CHASSIS

❶ *Remove the dial cord.*

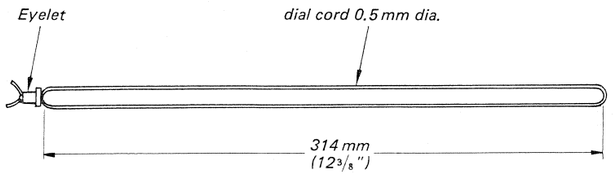


CHASSIS & MAIN BOARD



2-2. DIAL CORD

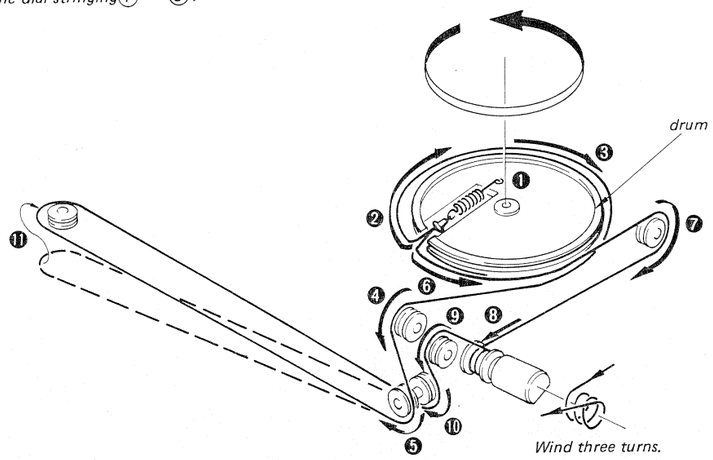
1) Dial Cord Preparation



2) Dial Cord Stringing

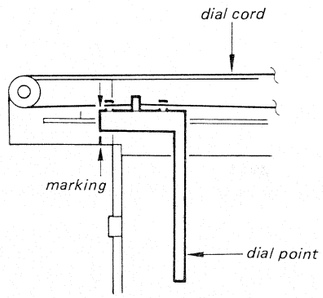
Perform the dial stringing in the numerical order given.
Retain the drum while performing the dial stringing ① ~ ⑤.

Turn the tuning capacitor shaft fully counterclockwise.



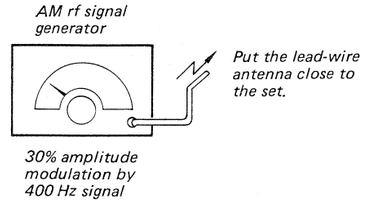
3) Dial Pointer Installation

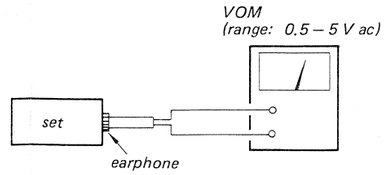
1. Turn the tuning shaft fully counterclockwise.
2. Place the dial pointer on the marking as shown below.
3. Secure the dial pointer to the dial cord with a suitable locking compound.



SECTION 3
ADJUSTMENTS

3-1. MW/LW SECTION



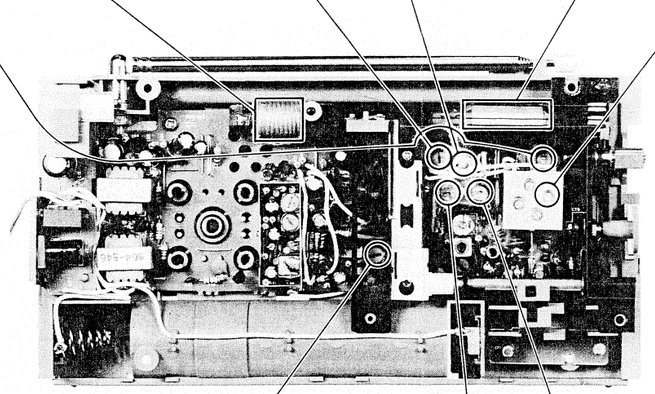


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
300 kHz	145 kHz
CT4	L7

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM.	
520 kHz	1,680 kHz
L10	CT6

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
620 kHz	1,400 kHz
L6	CT3

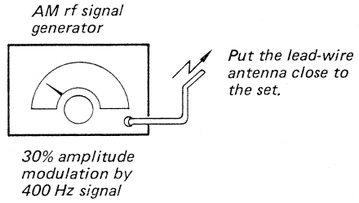


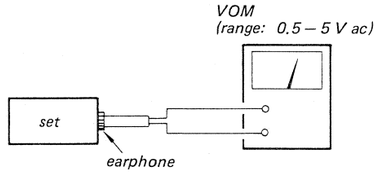
455 kHz	T3
Adjust for a maximum reading on VOM.	
AM IF ALIGNMENT	

L11	CT7
145 kHz	300 kHz
Adjust for a maximum reading on VOM.	
LW FREQUENCY COVERAGE ADJUSTMENT	

SECTION 3
ADJUSTMENTS

3-1. MW/LW SECTION



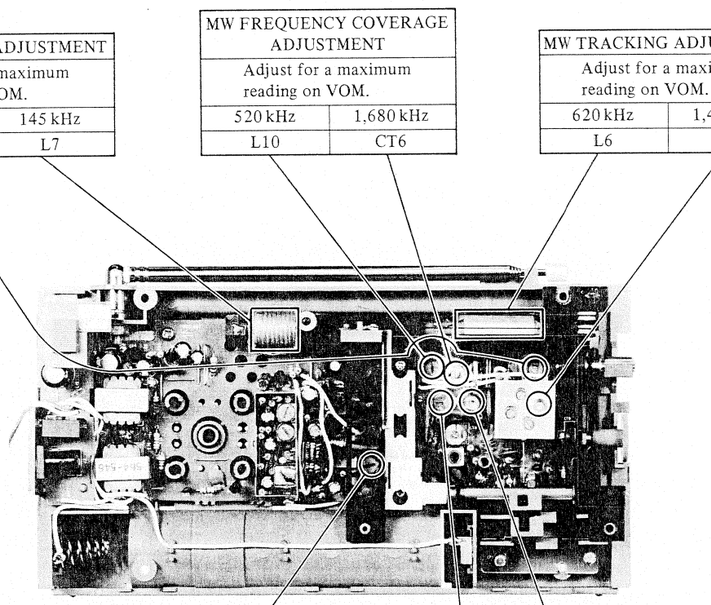


- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

LW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
300 kHz	145 kHz
CT4	L7

MW FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM.	
520 kHz	1,680 kHz
L10	CT6

MW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM.	
620 kHz	1,400 kHz
L6	CT3

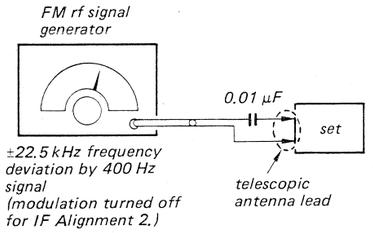


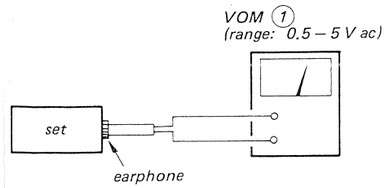
455 kHz	T3
Adjust for a maximum reading on VOM.	
AM IF ALIGNMENT	

L11	CT7
145 kHz	300 kHz
Adjust for a maximum reading on VOM.	
LW FREQUENCY COVERAGE ADJUSTMENT	

3-2. FM/SW SECTION

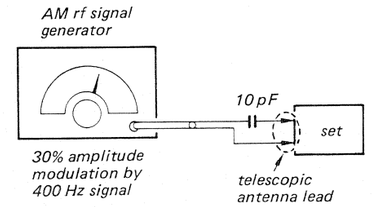
– FM –


FM rf signal generator
0.01 µF
set
±22.5 kHz frequency deviation by 400 Hz signal
(modulation turned off for IF Alignment 2.)
telescopic antenna lead



- Repeat the procedures in each adjustment several times, and the frequency coverage and tracking adjustments should be finally done by the trimmer capacitors.

– SW –

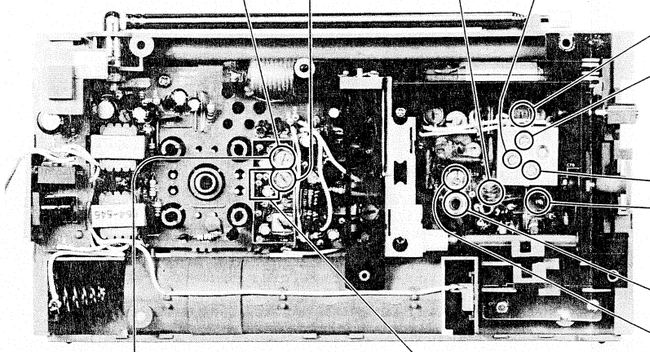


FM IF ALIGNMENT 1	
Adjust for a maximum reading on VOM ①.	
10.7 MHz with modulation	T1
	T2

FM TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
87.35 MHz	108.25 MHz
L1	CT-1

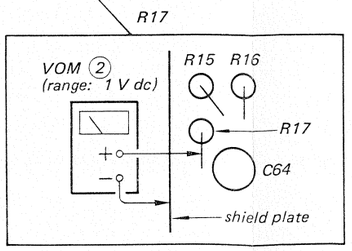
FINE TUNE: mechanical center

SW TRACKING ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
f min.	f max.
L8	CT5



FM FREQUENCY COVERAGE ADJUSTMENT	
Adjust for a maximum reading on VOM ①.	
CT-2	108.25 MHz
L3	87.35 MHz

FM IF ALIGNMENT 2	
Adjust for 0 V reading on VOM ②.	
10.7 MHz with no modulation	T2



CT8	L12
16 MHz	5.8 MHz
Adjust for a maximum reading on VOM ①.	
SW FREQUENCY COVERAGE ADJUSTMENT	

FINE TUNE: mechanical center

4-1. MOUNTING DIAGRAM

E F G H I J K L

5 15 6 8 7 IC1 9 10 11 12 14 13	Q IC
6 9 4 5 3 8 10 12	D

FERRITE-ROD ANTENNA

L6 MW L7 LW

BLU RED BLK YEL

ANT TELESCOPIC ANTENNA

FM INPUT

SONY

S1 RED YEL WHT

L13 L9

Q15 Q5 Q8 Q6 Q7 IC1 T3 T2 T1 T4 Q9 Q10 Q11 Q12 Q14 Q13 D12

D4 D3 D5 D6 D9 D10 D8

CF2 CF3

T5 INPUT TRANS

T6 OUTPUT TRANS

(SHIELD PLATE)

TUNED: 0.4V DETUNED: 2.8V

TUNED: 0.7V DETUNED: 0.15V

YEL WHT BLK

S1 BAND: FM → MW → LW → SW

(SHIELD PLATE) WHT

Note:

- ●— : parts extracted from the conductor side.
- ■ : part mounted on the conductor side.
- ⊢ : indicates side identified with part number.
- ▒ : B + pattern
- ▬▶▬ : signal path
- △ : internal component.

【JACK BOARD】

SP SPEAKER 8Ω

RED WHT

FM OUTPUT

S2 POWER ON OFF

WHT YEL BLK RED WHT

FM OUTPUT

J1 EARPHONE

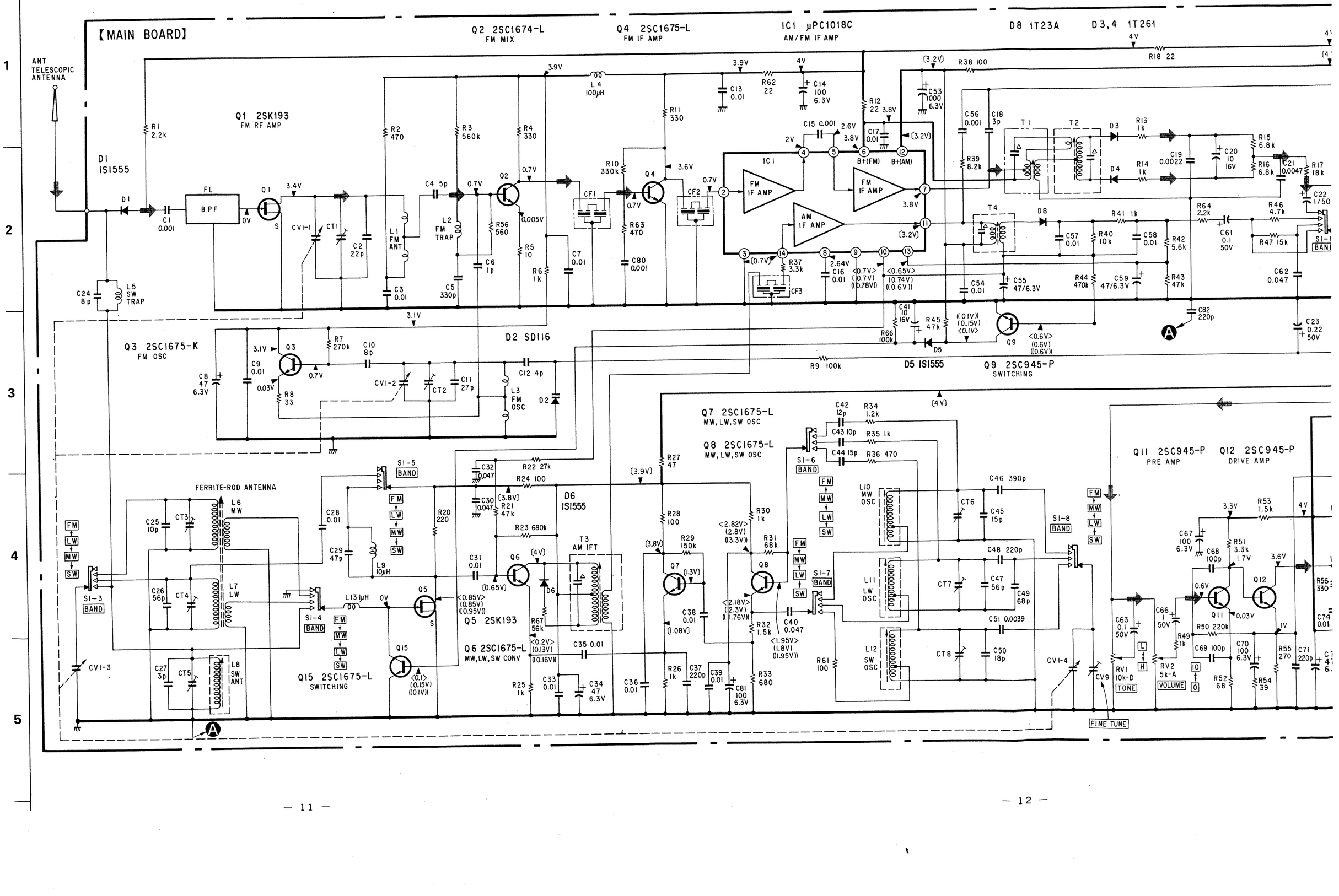
J2 DC IN 4.5V

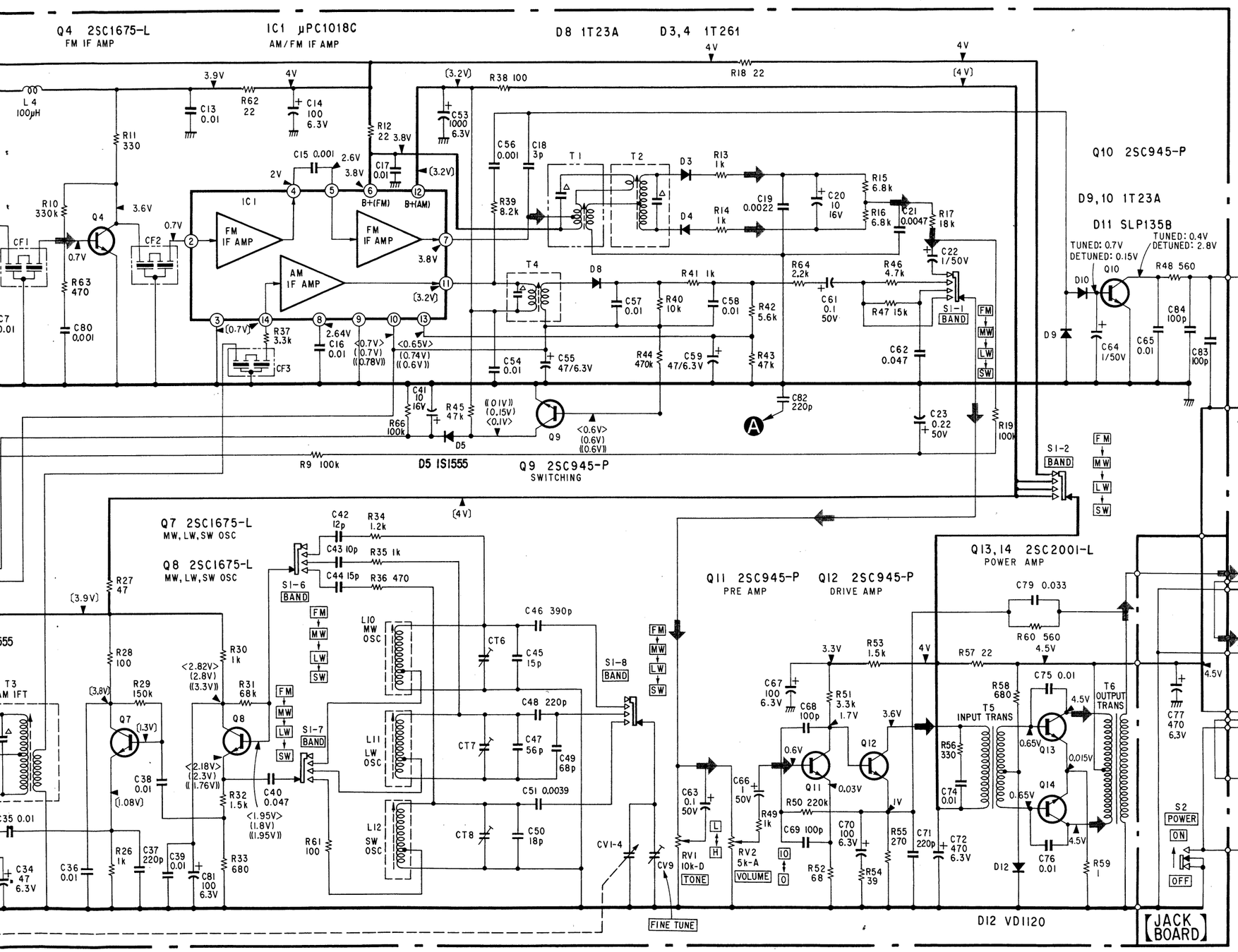
BLK RED

DRY BATTERY SIZE "C" (IEC DESIGNATION R14) 3PCS. 4.5V

BLK RED

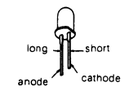
4-2. SCHEMATIC DIAGRAM



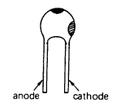


SEMICONDUCTOR LEAD LAYOUTS

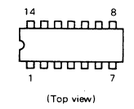
SLP135B



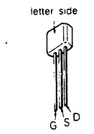
VD1120



μPC1018
μPC1018C-E



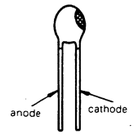
2SK193
2SK193-E



1S1555
SD116
1T261
1T23
1T23A

2SC1674
2SC1674-L
2SC1364
2SC2001
2SC945
2SC1675

MV1VS



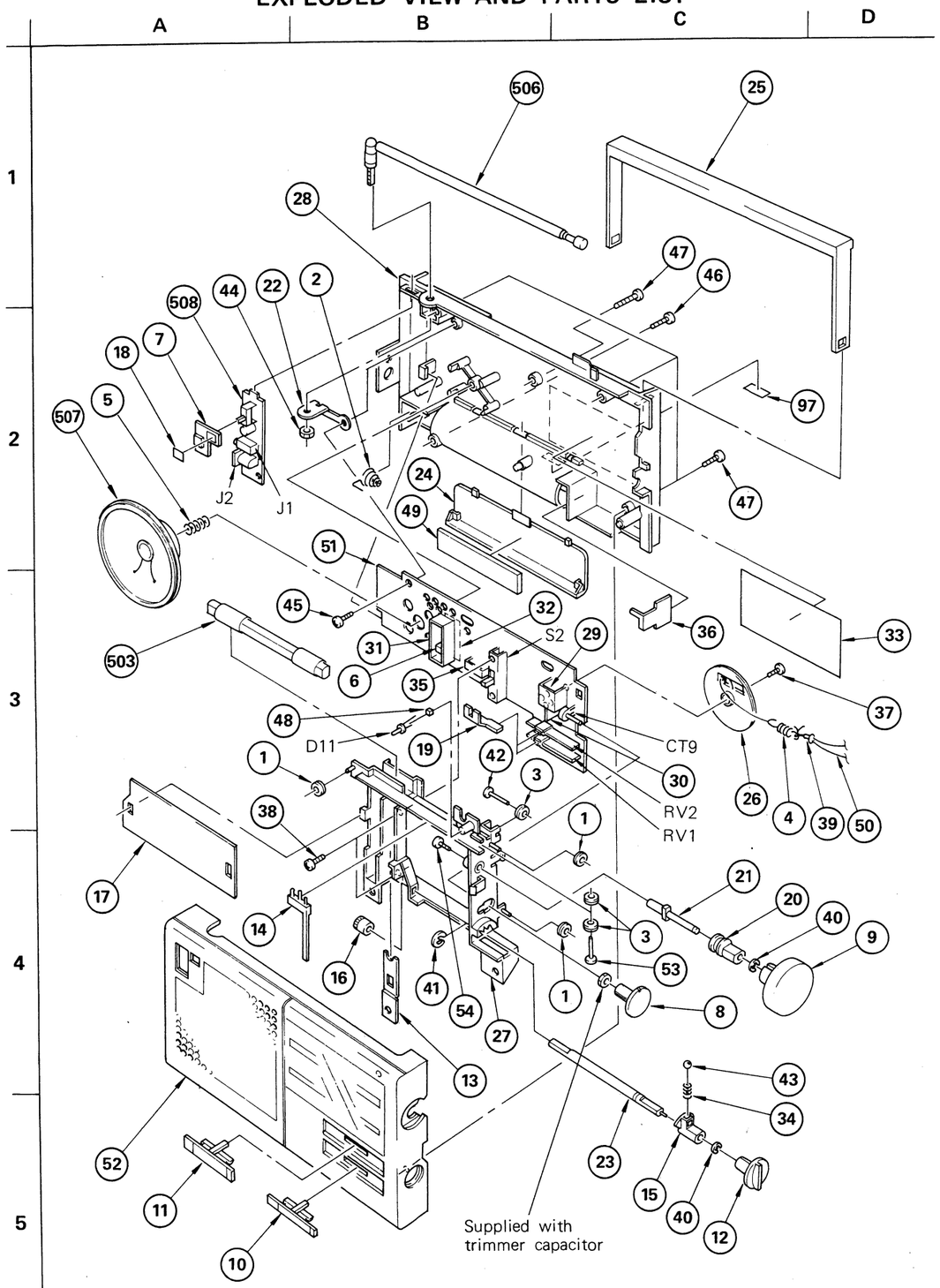
2SC710-13

Note:

- ➡ : signal path
- △ : internal component.
- ※ : selected to yield optimum performance.
- ——— : B+ bus.
- Readings are taken under no-signal (detuned) conditions with a VOM (50 kΩ/V).
  no mark: FM
  ( ) : LW
  [ ] : MW • LW • SW
  < > : MW
  (( )) : SW
- Switch

Ref. No.	Switch	Position
S1	BAND	FM
S2	POWER	OFF

SECTION 5
EXPLODED VIEW AND PARTS LIST



GENERAL SECTION

No.	Part No.	Description
1	3-801-216-XX	PULLEY
2	3-811-123-XX	SPRING
3	3-834-636-00	PULLEY
4	3-881-923-00	SPRING
5	3-885-103-00	SPRING
6 ♦	3-887-524-00	PLATE, SHIELD
7	3-890-201-00	KNOB, SWITCH, POWER
8	3-890-202-00	KNOB, FT
9	3-890-203-00	KNOB, TUNING
10	3-890-204-00	KNOB, TONE
11	3-890-205-00	KNOB, CONTROL
12	3-890-206-00	KNOB, SELECTOR, BAND
13 ♦	3-890-207-00	SLIDER
14	3-890-208-00	POINTER
15	3-890-209-00	SELECTOR, BAND
16	3-890-210-00	GEAR, SLIDER
17 ♦	3-890-211-00	PLATE, BACK, DIAL
18	3-890-212-00	LABEL, INDICATOR, POWER
19	3-890-213-00	JOINTER
20 ♦	3-890-214-00	SHAFT, TUNING
21 ♦	3-890-215-00	RETAINER, SHAFT, TUNING
22 ♦	3-890-216-00	PLATE, CONTACT, ANTENNA
23 ♦	3-890-217-00	ROD, SELECTOR
24	3-890-218-00	LID, BATTERY CASE
25	3-890-219-00	HANDLE
26	3-890-221-00	DRUM, VC
27	3-890-223-00	CHASSIS
28	3-890-225-00	CASE (REAR)
29 ♦	3-890-226-00	PLATE (A), SHIELD
30 ♦	3-890-227-00	PLATE (B), SHIELD
31 ♦	3-890-228-00	PLATE (D), SHIELD
32 ♦	3-890-229-00	PLATE (E), SHIELD
33 ♦	3-890-230-00	PLATE (F), SHIELD
34	3-890-231-00	SPRING, COMPRESSION
35	3-890-232-00	PLATE (C), SHIELD
36	3-985-133-00	TERMINAL, PLUS
37	7-621-559-20	SCREW +K 2.6X4
38	7-621-770-87	SCREW +P 2.6X5
39	7-623-605-01	EYELET, 1.3X2.5
40	7-624-102-04	STOP RING 1.5, TYPE -E
41	7-624-108-04	STOP RING 4.0, TYPE -E
42	7-625-713-80	RIVET 2X12
43	7-671-156-01	BALL, STENLESS
44	7-684-025-04	N 5, TYPE 2
45	7-685-146-21	SCREW +P 3X8 TYPE2 SLIT

GENERAL SECTION

No.	Part No.	Description
46	7-685-147-21	SCREW +P 3X10 TYPE2 SLIT
47	7-685-149-21	SCREW +P 3X14 TYPE2 SLIT
48	9-911-815-01	CUSHION
49	9-911-815-02	CUSHION, BATTERY
50	9-911-825-32	STRING, TETRON DIAL (0.3)
51 ♦	A-3660-363-A	PC BOARD ASSY, MAIN
52	X-3890-202-0	CABINET ASSY, FRONT
53	7-625-713-00	RIVET 2X8
54	7-621-259-35	SCREW P2.6X5

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
91	3-703-539-01	INSTRUCTION, COMMONNESS
92	3-703-593-11	LABEL (11585) (SMALL), FTZ
93	3-890-236-00	CUSHION
94	3-890-237-00	SHEET, PROTECTION
95	3-890-238-00	INDIVIDUAL CARTON
96	3-995-920-11	(AEP).....MANUAL, INSTRUCTION
96	3-995-920-41	(UK).....MANUAL, INSTRUCTION
97	3-998-901-00	LABEL (A,B), SERIAL NUMBER

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC, UPD···: μPD···

NOTE:
- Items
crip
are
- Item
they
serv
pate
- Due
numb
may
set.

GENERAL SECTION

No.	Part No.	Description
1	3-801-216-XX	PULLEY
2	3-811-123-XX	SPRING
3	3-834-636-00	PULLEY
4	3-881-923-00	SPRING
5	3-885-103-00	SPRING
6 ♦	3-887-524-00	PLATE, SHIELD
7	3-890-201-00	KNOB, SWITCH, POWER
8	3-890-202-00	KNOB, FT
9	3-890-203-00	KNOB, TUNING
10	3-890-204-00	KNOB, TONE
11	3-890-205-00	KNOB, CONTROL
12	3-890-206-00	KNOB, SELECTOR, BAND
13 ♦	3-890-207-00	SLIDER
14	3-890-208-00	POINTER
15	3-890-209-00	SELECTOR, BAND
16	3-890-210-00	GEAR, SLIDER
17 ♦	3-890-211-00	PLATE, BACK, DIAL
18	3-890-212-00	LABEL, INDICATOR, POWER
19	3-890-213-00	JOINTER
20 ♦	3-890-214-00	SHAFT, TUNING
21 ♦	3-890-215-00	RETAINER, SHAFT, TUNING
22 ♦	3-890-216-00	PLATE, CONTACT, ANTENNA
23 ♦	3-890-217-00	ROD, SELECTOR
24	3-890-218-00	LID, BATTERY CASE
25	3-890-219-00	HANDLE
26	3-890-221-00	DRUM, VC
27	3-890-223-00	CHASSIS
28	3-890-225-00	CASE (REAR)
29 ♦	3-890-226-00	PLATE (A), SHIELD
30 ♦	3-890-227-00	PLATE (B), SHIELD
31 ♦	3-890-228-00	PLATE (D), SHIELD
32 ♦	3-890-229-00	PLATE (E), SHIELD
33 ♦	3-890-230-00	PLATE (F), SHIELD
34	3-890-231-00	SPRING, COMPRESSION
35	3-890-232-00	PLATE (C), SHIELD
36	3-985-133-00	TERMINAL, PLUS
37	7-621-559-20	SCREW +K 2.6X4
38	7-621-770-87	SCREW +P 2.6X5
39	7-623-605-01	EYELET, 1.3X2.5
40	7-624-102-04	STOP RING 1.5, TYPE -E
41	7-624-108-04	STOP RING 4.0, TYPE -E
42	7-625-713-80	RIVET 2X12
43	7-671-156-01	BALL, STENLESS
44	7-684-025-04	N 5, TYPE 2
45	7-685-146-21	SCREW +P 3X8 TYPE2 SLIT

GENERAL SECTION

No.	Part No.	Description
46	7-685-147-21	SCREW +P 3X10 TYPE2 SLIT
47	7-685-149-21	SCREW +P 3X14 TYPE2 SLIT
48	9-911-815-01	CUSHION
49	9-911-815-02	CUSHION, BATTERY
50	9-911-825-32	STRING, TETRON DIAL (0.3)
51 ♦	A-3660-363-A	PC BOARD ASSY, MAIN
52	X-3890-202-0	CABINET ASSY, FRONT
53	7-625-713-00	RIVET 2X8
54	7-621-259-35	SCREW P2.6X5

ACCESSORY & PACKING MATERIAL

No.	Part No.	Description
91	3-703-539-01	INSTRUCTION, COMMONNESS
92	3-703-593-11	LABEL (11585) (SMALL), FTZ
93	3-890-236-00	CUSHION
94	3-890-237-00	SHEET, PROTECTION
95	3-890-238-00	INDIVIDUAL CARTON
96	3-995-920-11	(AEP).....MANUAL, INSTRUCTION
96	3-995-920-41	(UK).....MANUAL, INSTRUCTION
97	3-998-901-00	LABEL (A,B), SERIAL NUMBER

ELECTRICAL PARTS

Ref.No.	Part No.	Description			
501	1-151-405-00	CAP, TUNING, POLYETHYLENE			
502	1-231-892-00	FILTER, BANDPASS			
503	1-401-858-00	ANTENNA, FERRITE-ROD (LW/MW)			
504 ♦	1-422-056-00	COIL, AIR-CORE			
505 ♦	1-422-057-00	COIL, AIR-CORE			
506	1-501-256-00	ANTENNA, TELESCOPIC (SW/FM)			
507	1-503-126-00	SPEAKER			
508 ♦	1-607-187-00	PC BOARD, JACK			
509 ♦	1-607-188-00	PC BOARD, MAIN			
510 ♦	A-3660-363-A	PC BOARD ASSY, MAIN			
C11	1-102-643-21	CERAMIC	27PF	5%	50V
C45	1-101-971-00	CERAMIC	15PF	5%	50V
C46	1-107-183-00	MICA	390PF	5%	500V
C47	1-102-696-00	CERAMIC	56PF	5%	50V
C48	1-107-005-11	MICA	220PF	5%	500V
C50	1-102-866-00	CERAMIC	18PF	5%	50V
C62	1-161-021-00	CERAMIC	0.047MF	10%	25V
CF1	1-527-795-71	FILTER, CERAMIC			
CF2	1-527-795-71	FILTER, CERAMIC			
CF3	1-231-993-00	FILTER, MECHANICAL			
CT4	1-141-227-00	TRIMMER, CERAMIC			
CT6	1-141-213-00	CAP, TRIMMER			
CT7	1-141-227-00	TRIMMER, CERAMIC			
CT8	1-141-213-00	CAP, TRIMMER			
CT9	1-141-267-00	CAP, TRIMMER			
D1	8-719-815-55	DIODE 1S1555			
D2	8-719-111-16	DIODE SD116			
D3	8-719-026-11	DIODE 1T261			
D4	8-719-026-11	DIODE 1T261			
D5	8-719-815-55	DIODE 1S1555			
D8	8-719-422-21	DIODE 1T23			
D9	8-719-422-21	DIODE 1T23			
D10	8-719-422-21	DIODE 1T23			
D11	8-719-901-35	DIODE SLP135B			
D12	8-719-901-25	DIODE MV1VS			
IC1	8-759-110-15	IC UPC1018C-E			
J1	1-507-398-00	EARPHONE JACK			
J2	1-507-459-00	JACK			
L2 ♦	1-409-293-00	COIL, AIR CORE			
L4	1-408-080-00	MICRO INDUCTOR 100UH			
L5 ♦	1-401-456-00	ANTENNA COIL			
L8	1-401-963-00	COIL, ANT (SW)			
L9	1-408-117-00	MICRO INDUCTOR 10UH			
L10	1-406-004-00	COIL, OSC (MW)			

ELECTRICAL PARTS

Ref.No.	Part No.	Description
L11	1-406-005-00	COIL, OSC (LW)
L12	1-405-740-00	COIL, SW2 OSCILLATOR
L13	1-408-105-00	MICRO INDUCTOR 1UH
Q1	8-729-119-32	TRANSISTOR 2SK193-E
Q2	8-729-167-42	TRANSISTOR 2SC1674-L
Q3	1-806-671-13	TRANSISTOR 2SC710-13
Q4	1-806-671-13	TRANSISTOR 2SC710-13
Q5	8-729-119-32	TRANSISTOR 2SK193-E
Q6	1-806-671-13	TRANSISTOR 2SC710-13
Q7	1-806-671-13	TRANSISTOR 2SC710-13
Q8	1-806-671-13	TRANSISTOR 2SC710-13
Q9	8-729-663-47	TRANSISTOR 2SC1364
Q10	8-729-663-47	TRANSISTOR 2SC1364
Q11	8-729-663-47	TRANSISTOR 2SC1364
Q12	8-729-663-47	TRANSISTOR 2SC1364
Q13	8-729-100-13	TRANSISTOR 2SC2001
Q14	8-729-100-13	TRANSISTOR 2SC2001
Q15	8-729-671-13	TRANSISTOR 2SC710-13
S1	1-516-848-00	SWITCH, SLIDE
S2	1-554-020-00	SWITCH, SLIDE
T1	1-403-959-00	TRANSFORMER, DISCRI FM 7P TYPE
T2	1-403-953-00	TRANSFORMER, DISCRI FM 7P TYPE
T3	1-404-348-00	COIL, AM IFT
T4	1-403-960-00	I.F.T DETECTION
T5	1-423-049-XX	TRANSFORMER, INPUT
T6	1-427-517-00	TRANSFORMER, OUTPUT
VR1	1-226-731-00	RES, VAR, SLIDE 5K
VR2	1-226-732-00	RES, VAR, SLIDE 10K

NOTE:
- Items with no part number and no description are not stocked because they are seldom required for routine service.
- Items marked " ♦ " are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- Due to standardization, parts with part numbers (Δ-ΔΔΔ-ΔΔΔ-XX or Δ-ΔΔΔΔ-ΔΔΔ-X) may be different from those used in the set.

CAPACITORS:
- All capacitors are in μF. Common capacitors are omitted. Refer to the following lists for their part numbers. MF:μF, PF:μμF.

RESISTORS
- All resistors are in ohms. Common 1/4W, 1/8W and 1/16W carbon resistors are omitted. Refer to the following lists for their part numbers.
- F : nonflammable

COILS
- MMH : mH, UH : μH

SEMICONDUCTORS
In each case, U : μ, for example:
UA···: μA···, UPA···: μPA···, UPC···: μPC,
UPD···: μPD···

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9-950-882-11

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82C0686-1
Printed in Japan